



Note: Please read this User Manual and the Instruction Guide for sewing equipment in detail before use and for correct use the equipment shall be installed and operated by persons with vocational training.

This product is only applicable to the sewing equipment of the specified range and is not intended for other applications. Our company has the final authority for the interpretation of this User Manual.

For any queries on our product and any opinions or suggestions on our service, please do not hesitate to contact us at any time.

Safety instructions:

- 1、 Please read this Manual carefully and conscientiously before installation and debugging.
- 2、 Safety points marked with the symbol  in this Manual are for special care and shall be strictly observed so as not to cause any unnecessary damage.
- 3、 This product shall be installed and operated by persons with vocational training.
- 4、 Ensure that the housing case is securely earthed and conforms to voltage range and technical requirements as shown on the product nameplate.
- 5、 Disconnect the system power supply when performing the following operations:
 - a) When installing the machine;
 - b) When plugging and unplugging any connector in control box;
 - c) When threading, changing a needle and raising the nose;
 - d) When the machine is not in use and under repair or adjustment;
 - e) When While procedure upgrading
- 6、 Screw down all fasteners so as to prevent occurrence of vibration or needle position deviation abnormalities in time of sewing.
- 7、 Wait for above 10 seconds every time when restarting the control system after turnoff.
- 8、 Setting of the system control parameters or maintenance and repair shall be done by professional personnel having received related training.
- 9、 Make sure that all parts and fittings used for maintenance must be the ones supplied or approved by our company for use.



Note: Proper grounding must be correctly made when installing the controller, otherwise, the controller will fail to operate normally, or in more serious case, be shocked by electricity.

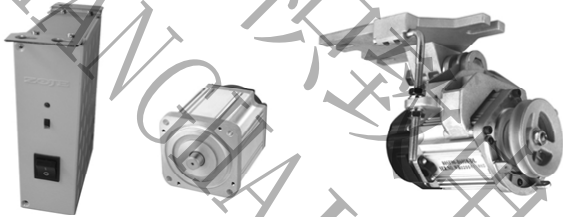
1. Product Introduction

1.1 Overview

For the WR57x series AC servo system for industrial sewing machine, its motor is directly coupled to the upper spindle of the machine and the motor is directly driven with the controller, offering a more flexible and convenient control performance, and further more, the motor and controller can be matched as required so as to meet the requirement of various sewing machines in terms of power and speed. A modular design is adopted for the system and its functions can be expanded only by adding a needle stopping magnet with which auto stop can be realized. It has the features of easy installation, convenient adjustment, compactness, large moment, low noise, high efficiency and more electricity saving. The control strategy of the optimized AC servo motor will allow for a high control precision of rotation speed and quick needle stop speed. The direct drive installation mode facilitates a more simple installation and minimize the overall vibration and allows for a more stable system running.

1.2 Outside View of WR57xSeries

The appearance of WR57x series is as shown in the figure below



1.3 Basic Parameters

Type of controller	WR57x series
Type of motor	DC brushless servo motor
Rated voltage	AC 220V±20%
Rated power	500W~550W
Highest rotating speed:	3500rpm~8000rpm
Maximum output torque	3.0Nm~3.6Nm

2 Installation

Installation steps

Step 1: Installation of the controller. It is required to drill holes in size as shown in the figure below and put in mounting screws of controller if no location holes are pre-drilled on the sewing machine table.

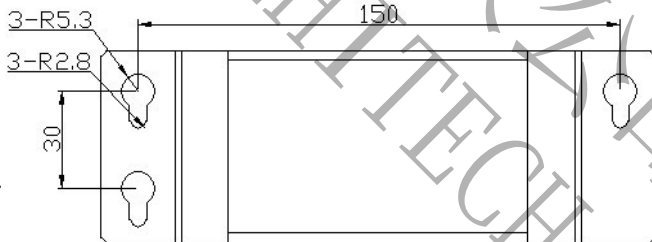
Note: while fastening the screw,

it is prohibited to knock it directly

so as to avoid that the electric

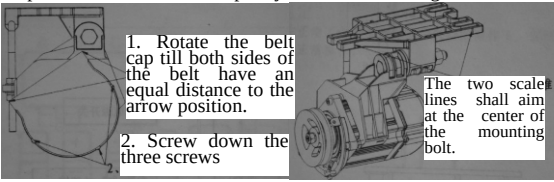
control cabinet and the plug-in

motor fall after long-term vibration.



Step 2: Installation of motor. Install the motor to the upper spindle of the machine and make it tight

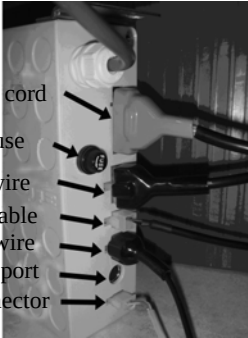
※ Step 3: Installation of belt pulley as shown in the figure below.



3. Operation Guide

3.1 Connection of each interface of the controller

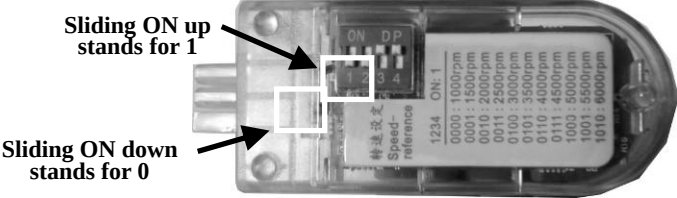
Motor power cord
Fuse
Pedal wire
Motor encoder cable
Safety switch wire
Program write port
sewing machine lamp connector



3.2 Dial Operation Box

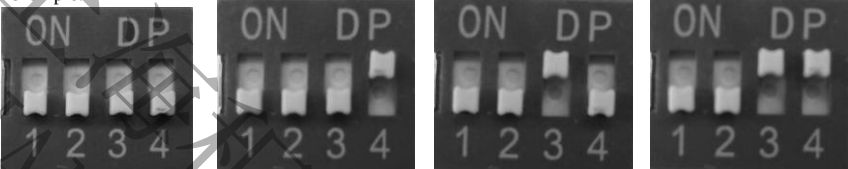
There is one 4-digit dial switch on the operation box which is used for setting of the motor rotation speed and it is described as follows:

3.2.1 Description of 4-digit dial switch



- 1) I speed control :The operation box is divided into 15 scales, and each 250rpm is 1 scale:
- | | | | | |
|---------------|---------------|---------------|---------------|---------------|
| 0000: 500 rpm | 0001: 750 rpm | 0010: 1000rpm | 0011: 1250rpm | 0100: 1500rpm |
| 0101: 1750rpm | 0110: 2000rpm | 0111: 2250rpm | 1000: 2500rpm | 1001: 2750rpm |
| 1010: 3000rpm | 1011: 3250rpm | 1100: 3500rpm | 1101: 3750rpm | 1110: 4000rpm |

For example:

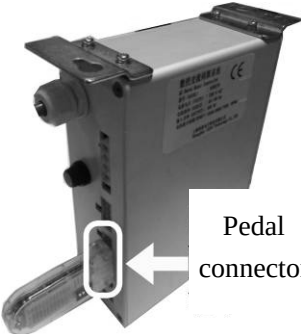


- 2) II speed control :The operation box is divided into 15 scales, and each 500rpm is 1 scale:
- | | | | | |
|----------------|----------------|---------------|---------------|---------------|
| 0000: 1000 rpm | 0001: 1500 rpm | 0010: 2000rpm | 0011: 2500rpm | 0100: 3000rpm |
| 0101: 3500rpm | 0110: 4000rpm | 0111: 4500rpm | 1000: 5000rpm | 1001: 5500rpm |
| 1010: 6000rpm | 1011: 6500rpm | 1100: 7000rpm | 1101: 7500rpm | 1110: 8000rpm |



Note: The system will automatically limit the max. sewing speed in accordance with the machine model settings.

3.2.2 Description of speed setting with dial operation box:



Pedal connector

The connector of the dial operation box and the pedal share one interface, when reset of speed is required, unplug the pedal connector after shutoff and complete disconnection of power. Then connector in the dial operation box, turn on and the casing led lamp flashes twice slowly (it means finish of setting), then re-plug in the pedal connector for normal use after complete disconnection of power.

4. Description of Failure Modes and Check

The LED red light is constant on when there is no failure. Failure is displayed by way of a blinking red LED light and only the red LED light is twinkling. The times n for continuous ephemeral twinkling of the red LED light will be the failure code E n .After one time of slow flashing of the red LED light, the times n for continuous ephemeral twinkling of the red LED light will be the failure code E(10+n)

Failure display	Failure	Remedies
Quick twinkling once stands for E1	Over-current of hardware	Check if it is well earthed
Quick twinkling twice stands for E2	Over-current of software	Check if it is well earthed
Quick twinkling 3 times stands for E3	Shutdown or overvoltage in operation	Check the mains voltage.
Quick twinkling 4 times stands for E4	Shutdown or under-voltage in operation	Check the mains voltage.
Quick twinkling 6 times stands for E6	Needle stop signal failure	Check if the needle connector is loose
Quick twinkling 7 times stands for E7	Motor HALL Signal failure	Check the motor connector for poor connection.
Quick twinkling 8 times stands for E8	Locked rotor failure of motor	Check if the motor wire is well connected, and if it is overloaded
Quick twinkling 9 times stands for E9	Over-speed failure (wrong indication of the exceeding max. speed for the set model)	Check if the motor wire connection is correct
Slow twinkling once and quick twinkling once stand for E11	Reserved by manufacturer	Handled by manufacturer
Slow twinkling once and quick twinkling 3 times stand for E13	EEPROM initialization error	Handled by manufacturer
Slow twinkling once and quick twinkling 4 times stand for E14	EEPROM read and write error	Handled by manufacturer
Slow twinkling once and quick twinkling 5 times stand for E15	Pedal zero point exceeds the range when checked	Pedal zero point exceeds the setting range
Slow twinkling once and quick twinkling 6 times stand for E16	Failure of pedal connected	The failure will alarm on a connected pedal when in an automatic testing mode
Slow twinkling twice stands for (E20)	Write success of program	Unplug the operation box after shut down and power disconnection